DANA SPICER®
Off-Highway Products

Service Manual

Axle
S20BZ128-1

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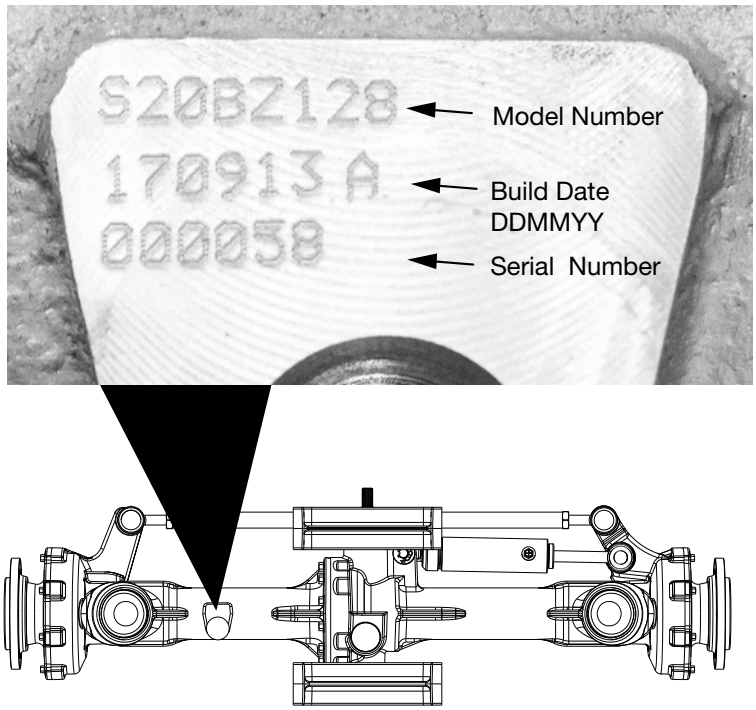
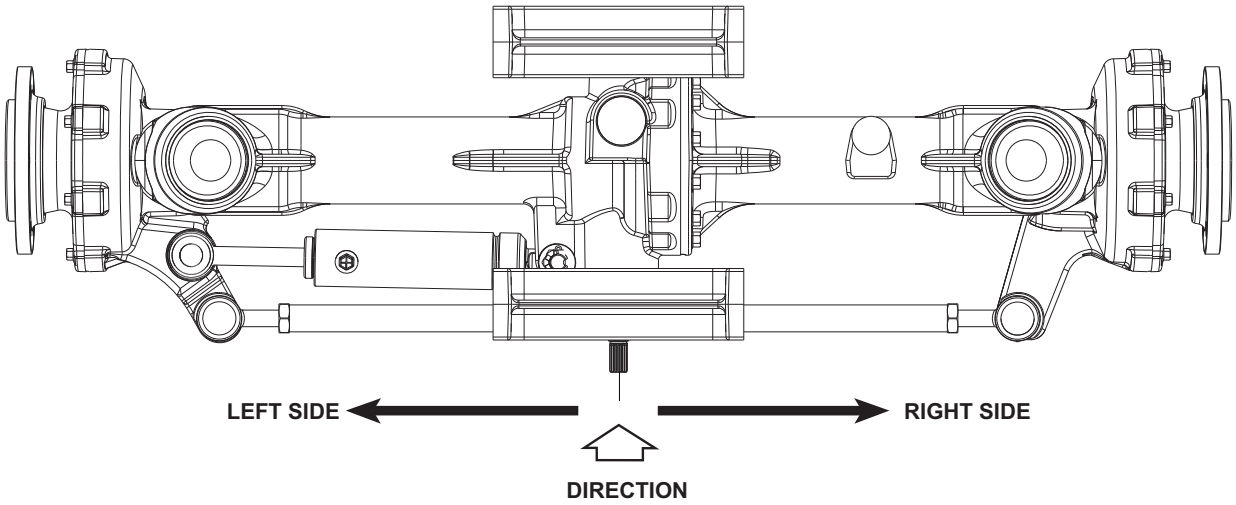
MAINTENANCE & LUBRICATION

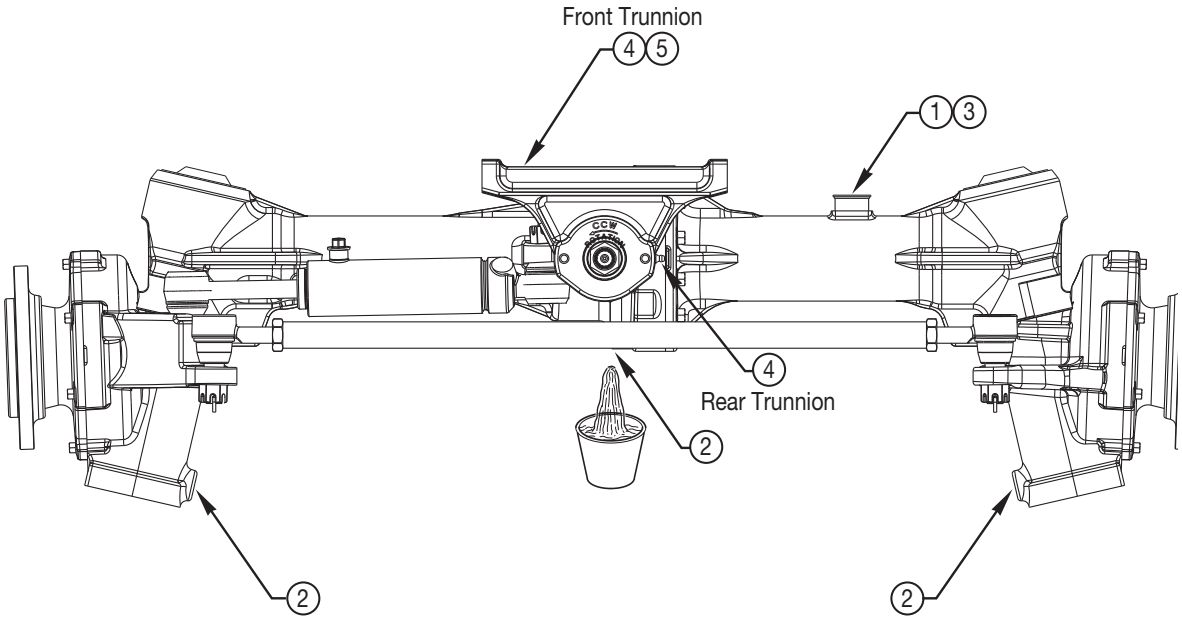
Data Plate



Definition of Viewpoints



Maintenance Points



1 - Oil fill plug

2 - Oil drain plug

3 - Check level plug

4 - Grease zerk

5 - Front trunnion thrust bolt

Maintenance Intervals

Operation	Component	Frequency	Lubricant
Oil Check Levels	Axle	Every 50 hours check level on dipstick	J20C
Oil Change	Axle	Initially after 100 working hours Every 600 hours Drain plug torque 16-20 N•m	
Greasing	Front & Rear Trunnion	Dry land applications - Weekly or every 50 hours whichever is earlier Wet land applications - Daily	NLGI 3EP
Tightening	Front Trunnion Bolt	Every 200 hours verify: Thrust bolt torque - 10-11 lbs.ft. [13-15 N•m] Jam nut - 22-26 lbs. ft [30-35 N•m]	--
	Wheel Nuts	Initially after 10 working hours Every 200 hours	

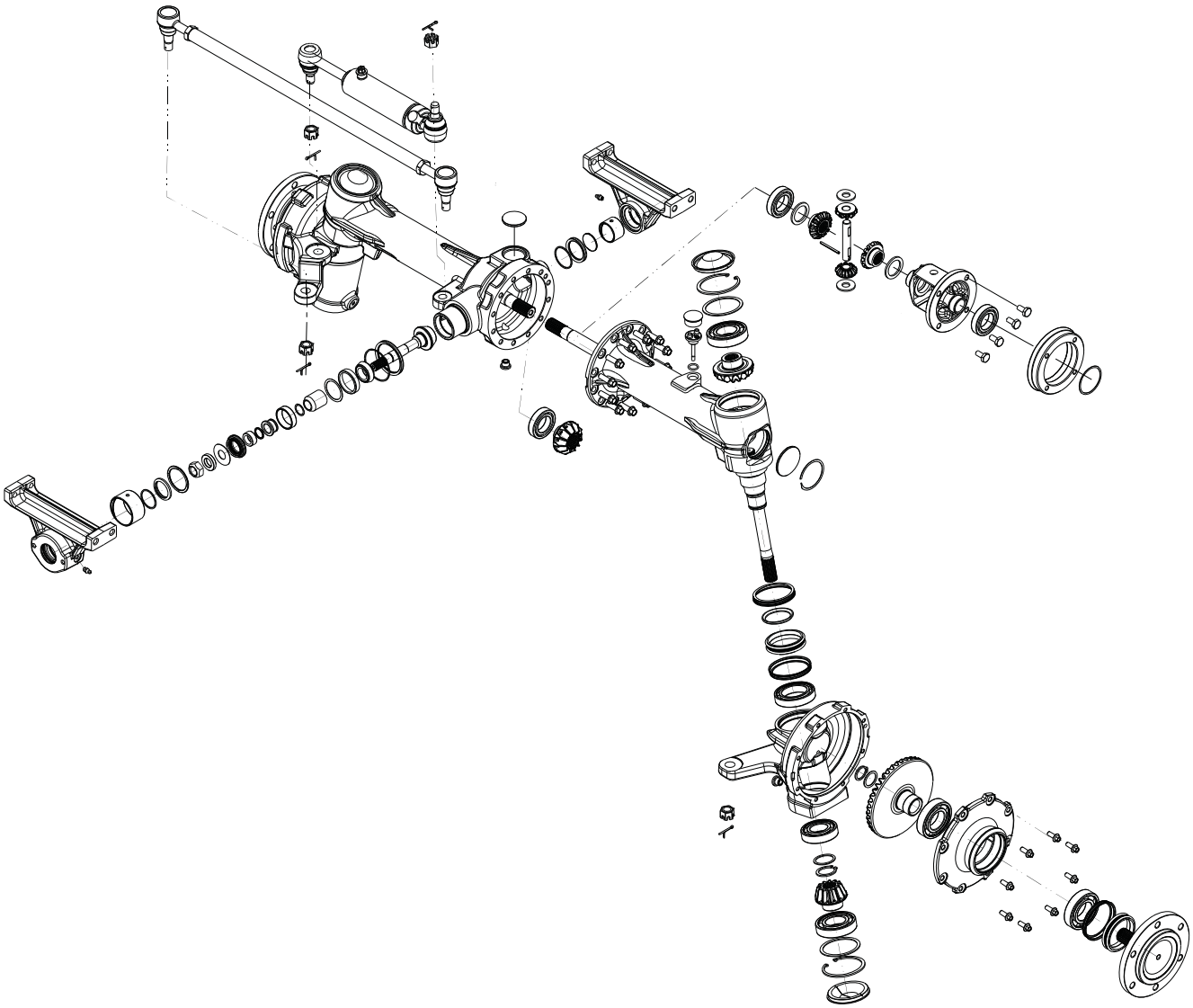
SAFETY PRECAUTIONS

1. During all operations described in this manual, the axle should be fastened onto a trestle, while the other parts mentioned should rest on supporting benches.
2. When removing one of the arms, an anti-tilting safety trestle should be placed under the other arm.
3. When working on an arm that is fitted on the machine, make sure that the supporting trestles are correctly positioned and that the machine is locked lengthways.
4. Do not admit any other person inside the work area; mark off the area, hang warning signs and remove the ignition key from the machine.
5. Use only clean, quality tools; discard all worn, damaged, low quality or improvised wrenches and tools. Ensure that all dynamometric wrenches have been checked and calibrated.
6. Always wear gloves and non-slip rubber shoes when performing repair work.
7. Should you stain a surface with oil, remove marks straight away.
8. Dispose of all lubricants, seals, rags and solvents once work has been completed. Treat them as special waste and dispose of them according to the relative law provisions obtaining in the country where the axles are being overhauled.
9. Make sure that only weak solvents are used for cleaning purposes; avoid using turpentine, dilutants and toluol, xylol-based or similar solvents; use light solvents such as Kerosene, mineral spirits or water-based, environment friendly solvents.
10. For the sake of clarity, the parts that do not normally need to be removed have not been reproduced in some of the diagrams.
11. For agricultural axles, the terms RIGHT and LEFT refer to the position from the operator's seat. For construction axles, the terms RIGHT and LEFT refer to the position outside facing the machine (with the input drive facing forward).
12. After repair work has been completed, accurately touch up any coated part that may have been damaged.
13. Follow all safety instructions in the Original Equipment Manufacturer (OEM) manual that came with the vehicle.

DANGER	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a situation which, if not avoided, may result in damage to components.
NOTICE	Indicates information which may make product service easier to perform.

DISASSEMBLY & REASSEMBLY

Exploded View



Driveshaft & Hydraulic Line Removal

1. Disconnect the steering cylinder hydraulic lines.
2. Remove the spring pin from the driveshaft splined connector.
3. Support the driveshaft and slide the splined connector toward the center of the driveshaft to remove the driveshaft from the machine.

Axle Removal

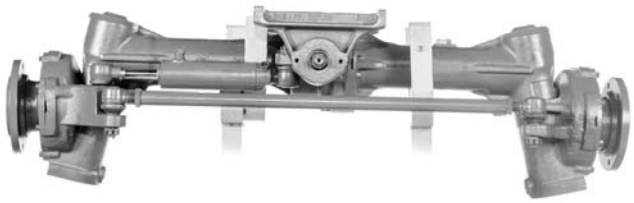


FIGURE 1:

1. Remove axle completely, supporting the axle with a hoist and remove front wheels. Place the axle on workbench or blocks to disassemble.

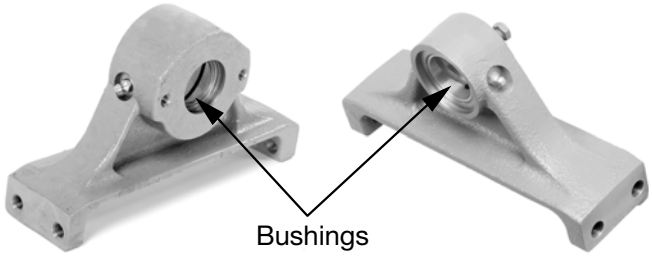


FIGURE 2:

2. Remove front and rear trunnions. Inspect axle pin bushings and replace, if required.

NOTE:

When removing the rear trunnions, also remove the thrust washer and both v-rings mounted on the housing.

When removing the front trunnion, also remove the v-ring and thrust washer.

Steering Cylinder Removal

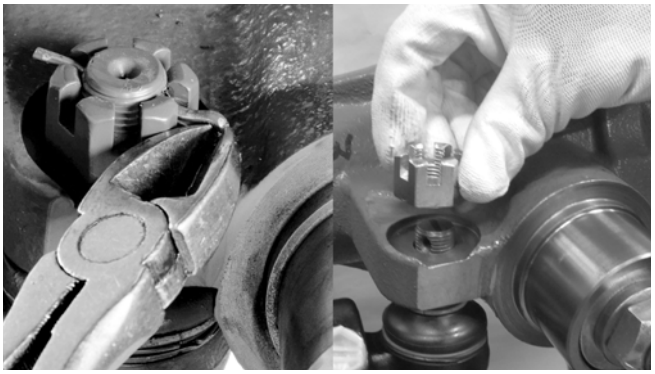


FIGURE 3:

1. Remove cotter pins, castle nuts, and washers.

FIGURE 4:

2. Remove steer cylinder.

NOTE:

Cylinder ball end studs are tapered. Use a Steering Cylinder & Tie Rod Removal Tool, page 33 to avoid damaging threads if cylinder is to be reused.

Tie Rod Removal

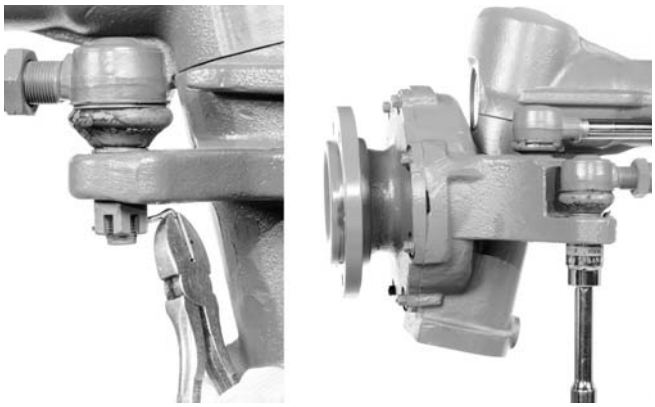


FIGURE 5:

1. Remove the cotter pin and the castle nut from tie rods.

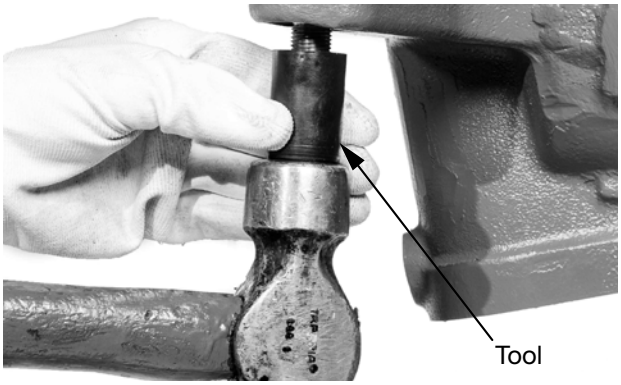


FIGURE 6:

2. Using a tie rod end removal tool, remove tie rod ends from knuckles.

NOTE:

Tie rod ball end studs are tapered. Use a Steering Cylinder & Tie Rod Removal Tool, page 33 to avoid damaging threads if tie rod is to be reused.

NOTE:

One of the tie rod ends and jam nut has left-hand threads.

Drain Plug Removal

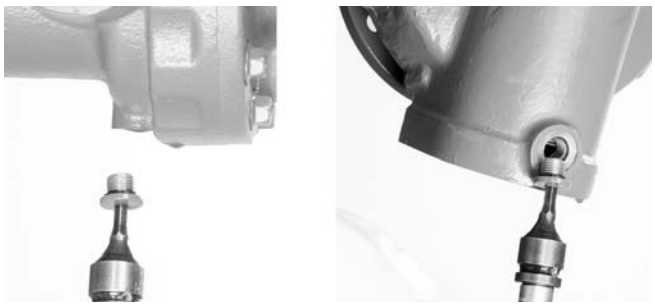


FIGURE 7:

1. Remove plugs and drain oil from final drive housings and main axle.

Final Drive Cover Disassembly

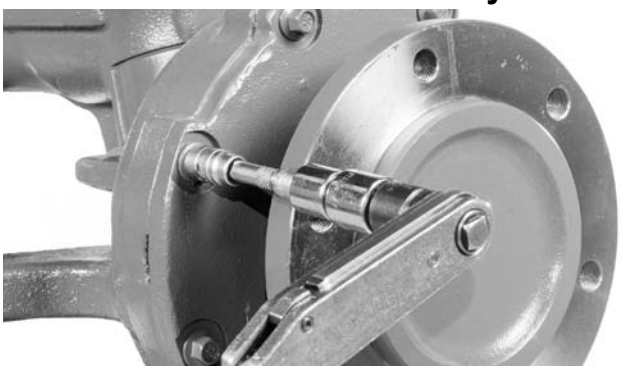


FIGURE 8:

1. Remove capscrews from final drive cover.

FIGURE 9:

2. Separate final drive cover and output shaft from final drive housing.

NOTE:

It may be necessary to pry the cover from the housing using the two pry bars on each side of the cover.

FIGURE 10:

3. Remove the snap ring and shim.

Final Drive Cover Disassembly

FIGURE 11:

4. Remove bevel gear from output cover.

FIGURE 12:

5. Remove the output cover.

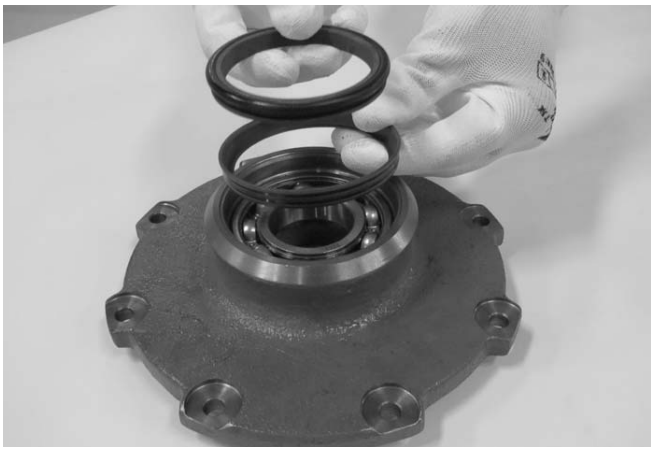


FIGURE 13:

6. Remove face seal from the output cover.

FIGURE 14:

7. Remove face seal from the output shaft

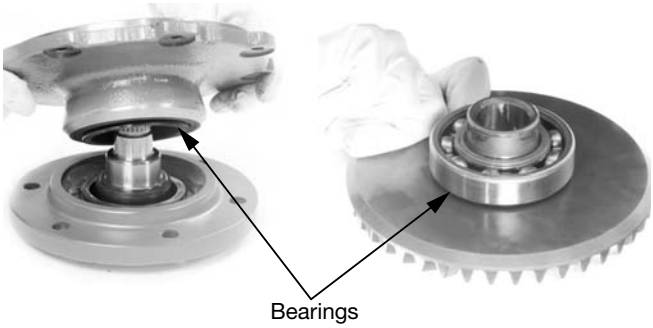


FIGURE 15:

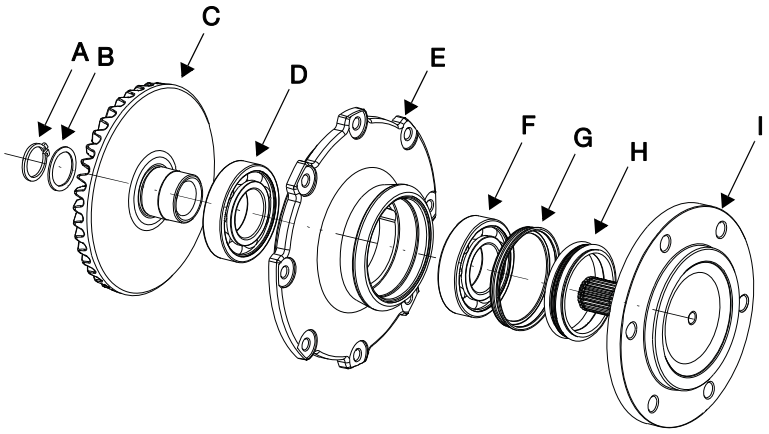
8. If necessary, press bearings off of bevel gear and output cover.

FIGURE 16:

9. Clean and inspect all parts replacing any damaged components.

Final Drive Cover Installation

A- Snap Ring
B- Shim
C- Bevel Gear
D- Bearing
E- Final Drive Cover
F- Bearing
G- Face Seal Cup
H- Face Seal
I - Output Shaft



1. Press bearing (F) to the final drive cover (E).
2. Install the face seal cup (G) using the Face Seal Cup Driver, page 31, on the final drive cover (E). (See “Face Seal Installation”, on page 17, for cleaning of face seal.)

⚠CAUTION

The face seal cup (G) should always be replaced. Do not reuse.

FIGURE 17:

3. Using the Face Seal Tool, page 29, install the face seal (H) half on the output shaft (I) and half on the final drive cover (E).

FIGURE 18:

4. Press the final drive cover (E) to the output shaft (I).

FIGURE 19:

5. Press bearing (D) to the bevel gear (C). Press the bevel gear (C) to the final drive cover and output shaft assembly (E&I).

FIGURE 20:

6. Select shims (B) such that the maximum gap between shim and snap ring is 0.1 mm (check gap with feeler gauge).

FIGURE 21:

7. Install final drive cover to knuckle housing tightening capscrews to 24–28 lbs. ft. [32–38 N•m].

Drop Shaft & Knuckle Disassembly

FIGURE 22:

8. Remove final drive cover assembly. (See “Final Drive Cover Disassembly”, on page 6.)

FIGURE 23:

9. Carefully remove welch plug from knuckle housing.

FIGURE 24:

10. Remove snap ring from knuckle.

FIGURE 25:

11. Remove shim(s) from knuckle. Save all shim(s) between the snap ring and bearing.

FIGURE 26:

12. Remove bevel gear and bearing assembly along with drop shaft.

FIGURE 27:

13. Remove snap ring and shim from knuckle housing.

FIGURE 28:

14. Remove the knuckle housing from the trumpet arm.

FIGURE 29:

15. Inspect all knuckle and drop shaft parts replacing any unserviceable components.

Drop Shaft & Knuckle Assembly

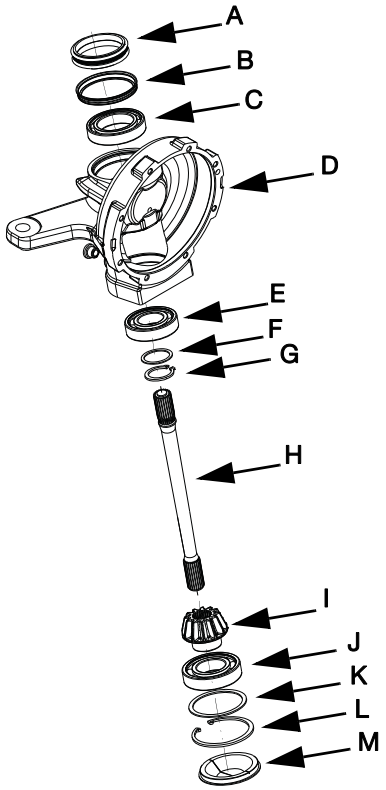


FIGURE 30:

1. If removed, press bearings (C&E) into knuckle housing (D) using the “Knuckle Bearing Driver Tool”, on page 32.

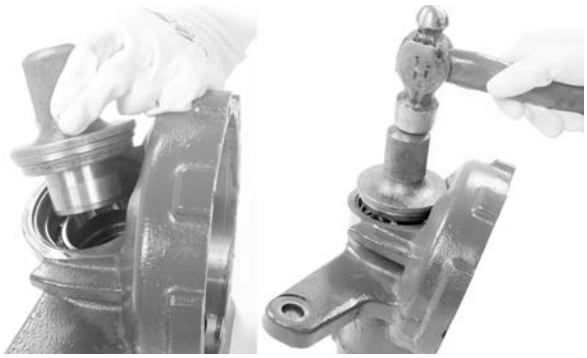


FIGURE 31:

2. Install the face seal cup (B) using the Face Seal Cup Driver, page 31, on the knuckle housing (D). (See Face Seal Installation, page 17, for cleaning of face seal.)

⚠CAUTION

The face seal cup (B) should always be replaced. Do not reuse.

FIGURE 32:

3. Install face seal (A) using the Face Seal Tool, page 29. (See “Face Seal Installation”, on page 17.)

FIGURE 33:

4. Lubricate face seal (A).

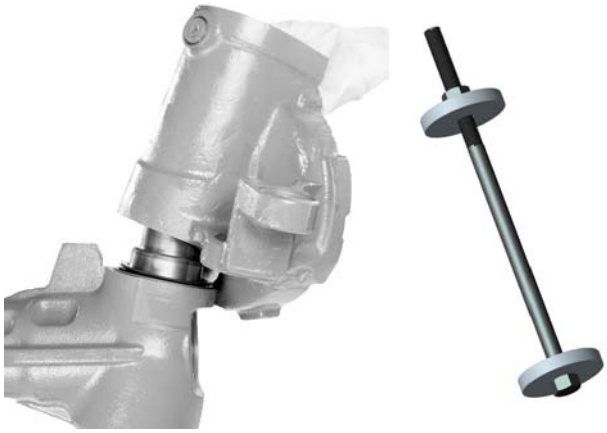


FIGURE 34:

5. Install knuckle on shoulder housing with spacer. Assemble using the “Knuckle to Trumpet Assembly Tool”, on page 37.

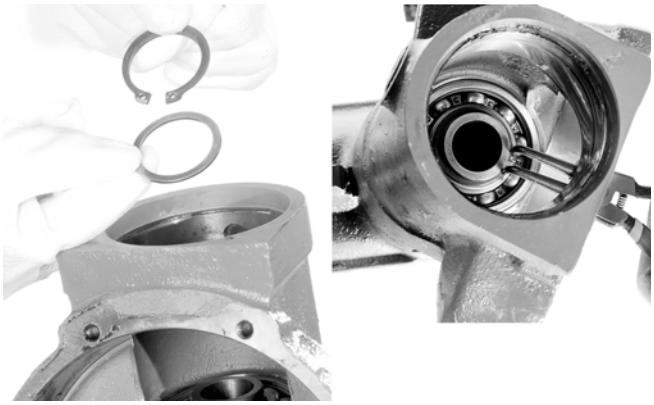


FIGURE 35:

6. Assemble shim (F) and snap ring (G) on the trumpet spindle ensuring a maximum end play of 0.004 in [0.1mm] (check gap with feeler gauge).

FIGURE 36:

7. Install final drive cover assembly to knuckle housing. (See “Final Drive Cover Installation”, on page 8.)

FIGURE 37:

8. Install bevel gear and bearing assembly (I&J), any shim(s) (K), and snap ring (L) on drop shaft.
9. To set lower final drive backlash, shim (G) the bevel gear end play to 0.028–0.038 in. [0.71–0.96 mm].

FIGURE 38:

10. The end play sets backlash to 0.006–0.008 in. [0.15–0.20 mm].

FIGURE 39:

11. Remove bevel gear and bearing assembly and install drop shaft (H).

FIGURE 40:

12. Reassemble bevel gear and bearing assembly (I&J), shim (K), and snap ring (L).

FIGURE 41:

13. Apply Loctite 380/480 to a new welch plug (M) and install to knuckle housing using the Welch Plug Driver Tools, page 36.

⚠CAUTION

The welch plug should always be replaced. Do not reuse.

Shoulder Disassembly

1. Remove final drive cover assembly. (See “Final Drive Cover Disassembly”, on page 6.)
2. Remove drop shaft and knuckle assembly. (See “Drop Shaft & Knuckle Disassembly”, on page 9.)

FIGURE 42:

3. Remove the top welch plug.

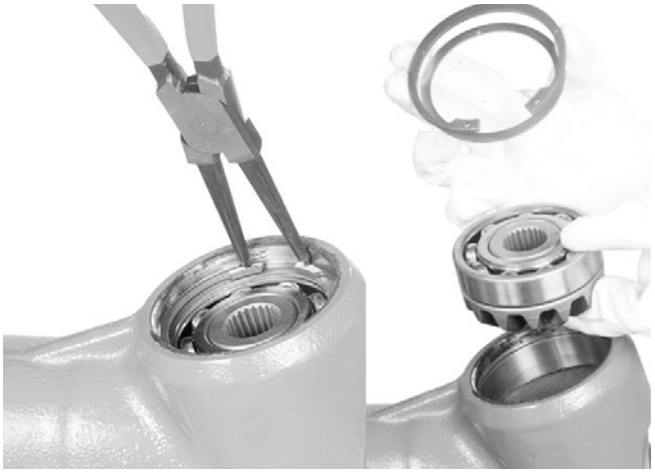


FIGURE 43:

4. Remove snap ring, shims, and 14T bevel gear and bearing assembly from shoulder housing.

FIGURE 44:

5. Remove 11T bevel gear and bearing assembly.

FIGURE 45:

6. Remove the knuckle bearing spacer and face seal.

FIGURE 46:

7. Using a screwdriver, loosen the front welch plug snap ring.

FIGURE 47:

8. Remove snap ring and welch plug from shoulder.

FIGURE 48:

9. Press off bearings from bevel gears, if necessary. Clean and inspect all parts replacing any damaged components.

Shoulder Assembly

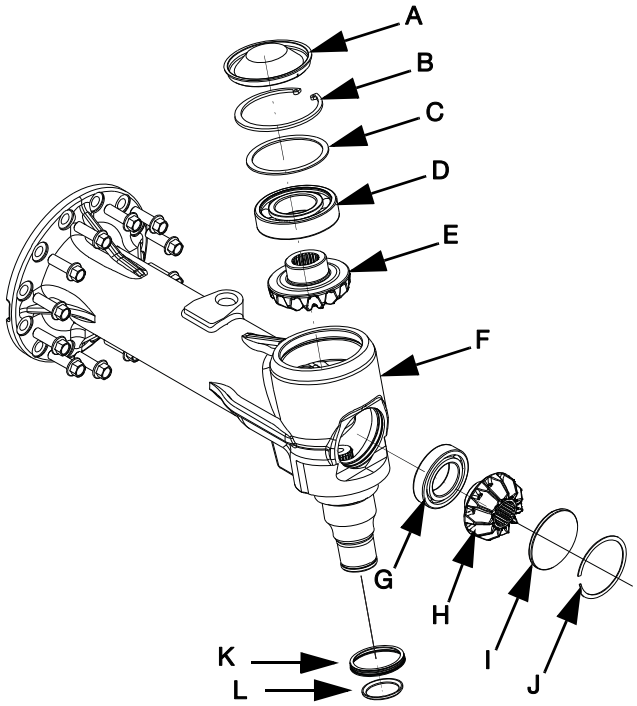


FIGURE 49:

1. If removed, press bearings (D&G) onto bevel gears (E&H).

FIGURE 50:

2. Install 11T bevel gear and bearing assembly (G&H).

FIGURE 51:

3. Install 14T bevel gear and bearing assembly (D&E) with snap ring (B) into shoulder housing.

NOTE:

Do not install shims (C) until backlash measurements are taken.

FIGURE 52:

4. Measure end play of the upper shoulder gear.
To set the end play:

a. Measure distance between the bearing (D) and the snap ring (B) at several locations.

b. Assemble shims (C) such that end play is within 0.014–0.017 in. [0.36–0.43 mm]. This will ensure backlash is 0.006–0.010 in. [0.15–0.25 mm]

FIGURE 53:

5. Install the top welch plug (A) using the Welch Plug Driver Tools, page 36.

⚠CAUTION

The welch plug should always be replaced. Do not reuse.

FIGURE 54:

6. Install welch plug (I) and snap ring (J) from shoulder.

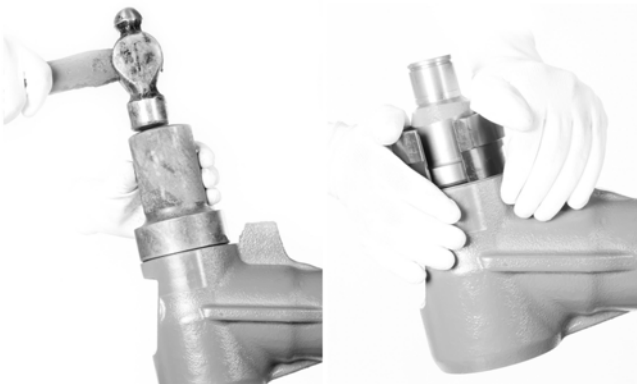


FIGURE 55:

7. Install shoulder face seal cup (K) using the Face Seal Cup Driver, page 31.

⚠CAUTION

The face seal cup (C) should always be replaced. Do not reuse.

8. Install face seal (C) using the Face Seal Tool, page 29. (See “Face Seal Installation”, on page 17.)

FIGURE 56:

9. Install spacer (L) on housing.
10. Install drop shaft and knuckle assembly. (See “Drop Shaft & Knuckle Assembly”, on page 11.)
11. Install final drive cover. (See “Final Drive Cover Installation”, on page 8.)

Face Seal Installation

⚠CAUTION

- The face seal cup should always be replaced. Do not reuse.
- Replace damaged seals. If metal face seals are damaged, the face seal o-rings should also be replaced.
- Clean metal face seal rings with a non-petroleum based solvent.

1. Housing components that contact the rubber seal must be free from foreign material (oil, grease, dirt, metal chips, dust or lint particles, etc.) before installing the seal. This should be done using a lint-free wipe and a non-petroleum based solvent. Dry with a clean wipe.
2. Clean face seal o-ring with isopropyl alcohol spray prior to installation to remove any debris.

NOTE:

Sealing rings must be handled with care. Lapped sealing faces must not be damaged, scratched, or contaminated with dirt or grease.

3. When installing the rubber o-ring on the seal ring, ensure that it is uniformly seated on the retaining lip and is not twisted.

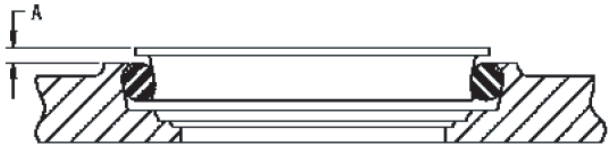


FIGURE 57:

FIGURE 58:

4. Place the seal in the Face Seal Tool, page 29, and locate this assembly squarely against the top of the conical seal.
5. Spray the o-ring and seat with isopropyl alcohol to act as a lubricant to the o-ring.

FIGURE 59:

6. Use sudden and even pressure to push in the seal and ensure the retaining lip is not twisted or pinched.
7. The sealing ring face should be parallel to the conical seal face within 0.50 mm (see Figure 57).
8. After installing the seal halves, wipe both metal sealing faces clean with a lint-free cloth.

NOTE:

Metal face seals should be replaced when the distance between the seal inner diameter and seal contact band is less than 50% of the distance between the seal inner diameter and the outer diameter.

9. Then apply a coat of clean MS8[1] oil to the metal seal faces with a lint-free applicator. The oil must not wet surfaces other than the sealing faces.
10. Clean the metal surfaces with lint-free cloth.

1 MS8 oil is mineral-based oil ranging from 10W to 90W.

Center Section Removal & Disassembly

1. Before removing the differential, remove the driveshaft (see page 4), axle (see page 5), steering cylinder (see page 5), tie rods (see page 6), and right-hand and left-hand wheel end assemblies.

FIGURE 60:

2. Properly support both halves of the axle. Loosen the capscrews and remove the short housing.

FIGURE 61:

3. Remove right-hand axle shaft.

FIGURE 62:

4. Remove the shim(s) from the right-hand trumpet arm.

FIGURE 63:

5. Remove the differential assembly from left-hand trumpet arm.
6. Remove left-hand axle shaft.

FIGURE 64:

7. Press off both bearings, if necessary. Then remove ring gear capscrews and ring gear from differential case.

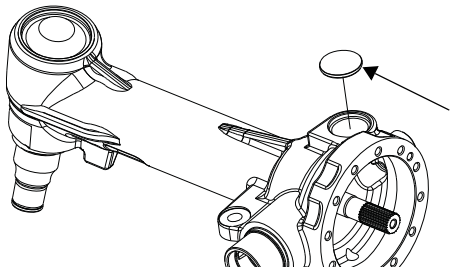


FIGURE 65:

8. Remove top welch plug and inspect inside of case.

NOTE:

The differential case and internal parts come as an assembly. If any damage is apparent, there is no need to disassemble the case, as the whole assembly must be replaced.

9. Clean and inspect all parts replacing any damaged components.

Pinion Disassembly

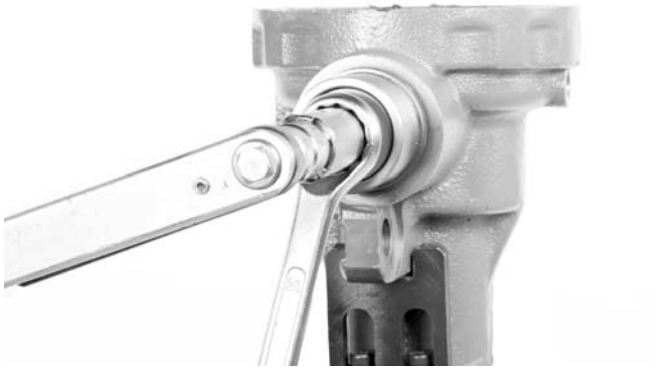


FIGURE 66:

10. Loosen pinion nut.

FIGURE 67:

11. Remove the pinion nut, spacer, and slinger. DO NOT discard nut at this time.

⚠CAUTION

The pinion nut is a torque prevailing nut. Always replace this nut. DO NOT reuse.

Never tighten a torque prevailing nut with an impact wrench. Always use a torque wrench to tighten correctly.

FIGURE 68:

12. Remove spacer and o-ring.

FIGURE 69:

13. Remove pinion, bearing cone, pinion bearing spacer, and shim from housing.

NOTE:

The ring gear and pinion gear are a matched set and are serviced as an assembly. If either the ring gear or pinion has wear or damage, both must be replaced.

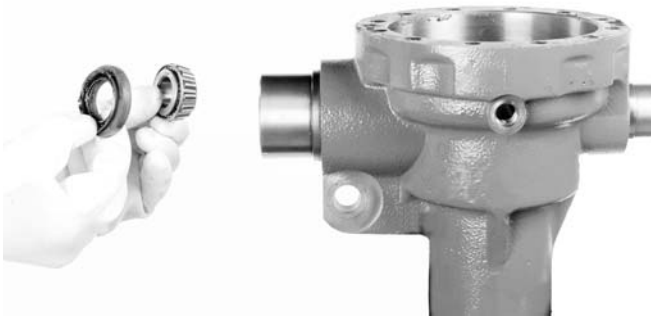


FIGURE 70:

14. Remove oil seal and bearing cone.

FIGURE 71:

15. Remove both bearing cups being careful not to damage housing surface.

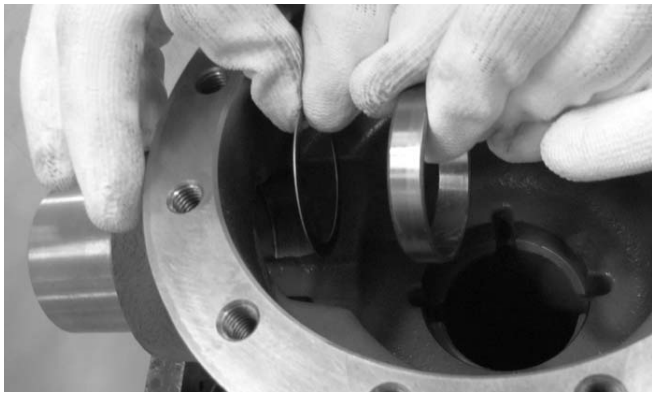


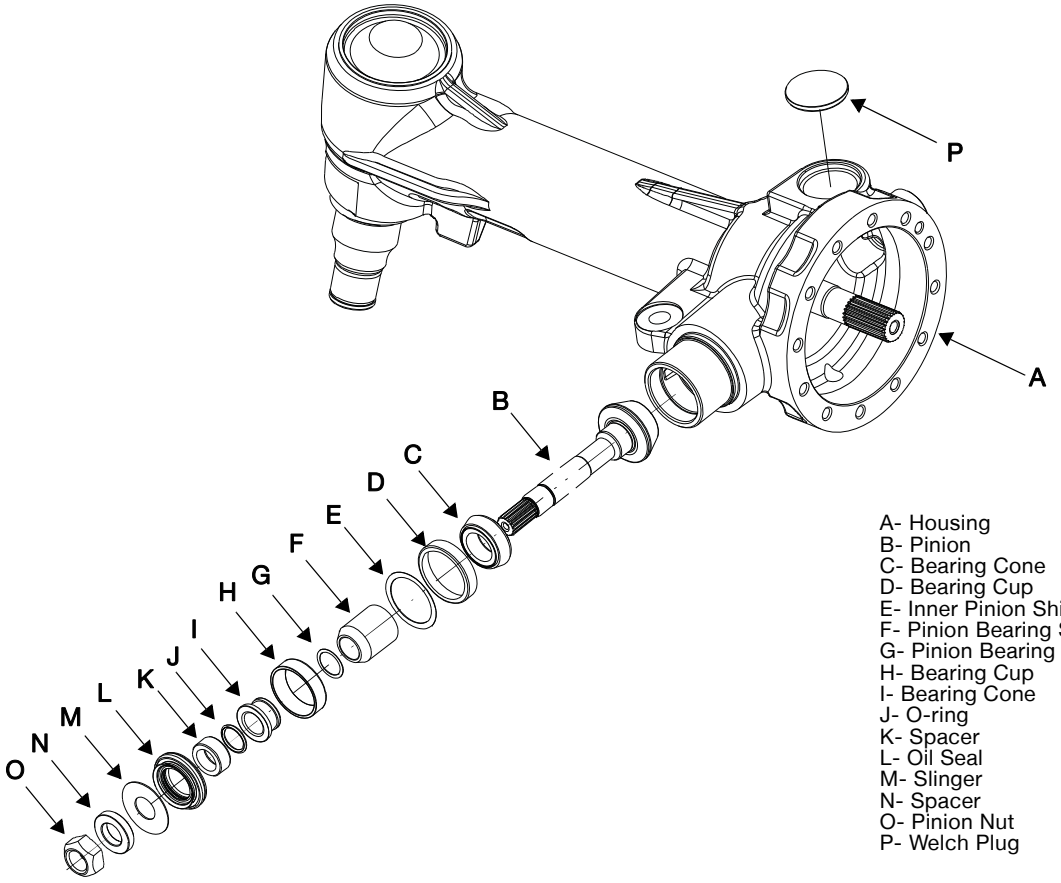
FIGURE 72:

16. Remove shim with inner bearing cup.

FIGURE 73:

17. Clean and inspect all parts replacing any damaged components.

Center Section Assembly & Installation



A- Housing
B- Pinion
C- Bearing Cone
D- Bearing Cup
E- Inner Pinion Shim
F- Pinion Bearing Spacer
G- Pinion Bearing Preload Shim
H- Bearing Cup
I- Bearing Cone
J- O-ring
K- Spacer
L- Oil Seal
M- Slinger
N- Spacer
O- Pinion Nut
P- Welch Plug

Pinion Assembly

1. Assemble bearing cone (C) to pinion (B).

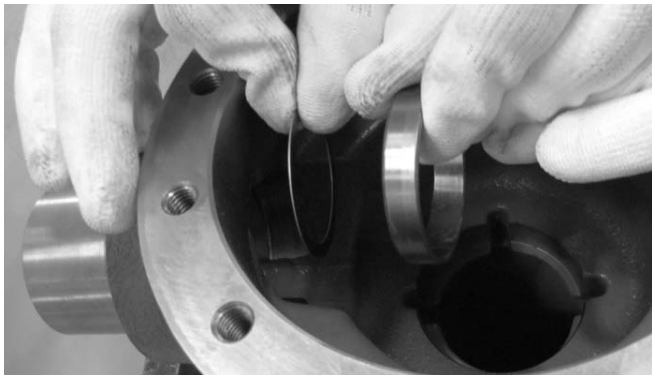


FIGURE 74:

2. Place inner shim(s) (E) under bearing cup (D) to set pinion height.

a. If the original pinion and bearing are being used, use the original shims, or install new shims the same thickness as original shims.

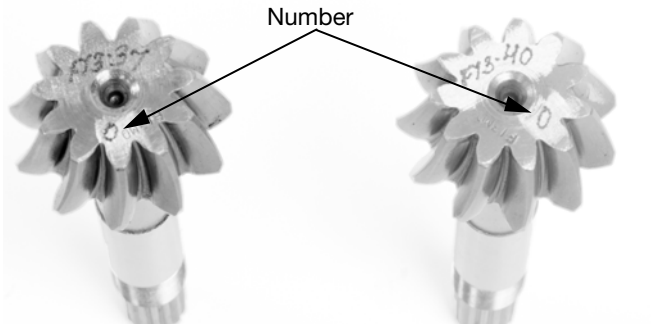


FIGURE 75:

b. If ring and pinion or bearing are being replaced, notice the (+) or (-) number on the end of pinion or on pinion stem (B). This indicates the best running position of each particular gear set in thousandths of an inch. If the number on the new set is not the same as the number on the one being replaced, adjust the height by adding or removing inner shim(s) (E) from original shim pack according to dimension etched on the end of pinion or on pinion stem.

Example 1: If the old pinion reads +4 and the new pinion is marked 0, add 0.004 in. shims to the original pack.
Example 2: If the old pinion reads +2 and the new pinion is marked -1, add 0.003 in. shims to the original pack.

FIGURE 76:

3. Using a Pinion Bearing Driver Tool, page 35, assemble bearing cups (D&H) and shims (E) in the housing (A).

FIGURE 77:

4. Install the pinion with bearing (B&C), spacer (F), and shim (G).

NOTE:

Number on pinion and ring gear indicate matched set. Make sure numbers on ring and pinion gears match before assembling.

FIGURE 78:

5. Install the bearing cone (I) using the Pinion Bearing Driver Tool, page 35.

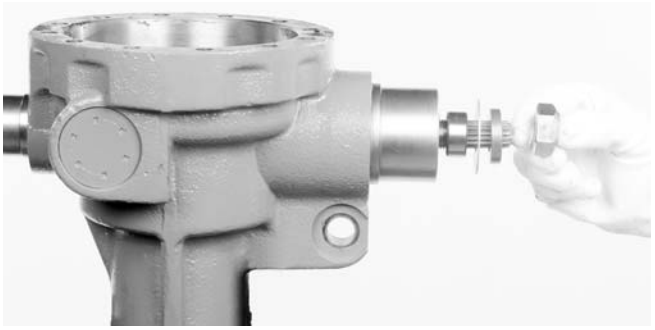
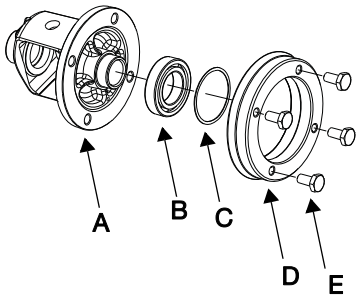


FIGURE 79:

6. Install the spacer (K), slinger (M), spacer (N) & **OLD pinion nut** (O). Spacer bore chamfer should be towards o-ring.

FIGURE 80:

7. Tighten the old pinion nut to 75–90 lbs. ft. [102–122 N•m].
8. Check the rotation of the pinion.
   a. Verify the pinion rotation torque is 4-9 lbs. in. [0.45–1.06 N•m].
   b. If the pinion does not turn within specification, adjust the shim pack (G). Add shims if rotation torque is too high, remove shims if rotation torque is too low.



A- Differential Case
B- Bearing
C- Shim
D- Ring Gear
E- Bolts

FIGURE 81:

FIGURE 82:

9. Install the ring gear (D) to the differential (A) tightening the ring gear bolts (E) to 58–65 lbs. ft. [79–88 N•m].

NOTE:

Bolts used to fasten differential and ring gear are special bolts and should be replaced after disassembly.

FIGURE 83:

10. Drop axle shaft in the long housing. Place the differential assembly (with bearings) in the long trumpet housing on axle shaft.

FIGURE 84:

11. Place original shims (C) on the differential bearing (B) and install the short housing.

FIGURE 85:

12. Install 4 bolts torqued to 50-55 lbs. ft. [68-75 N•m].

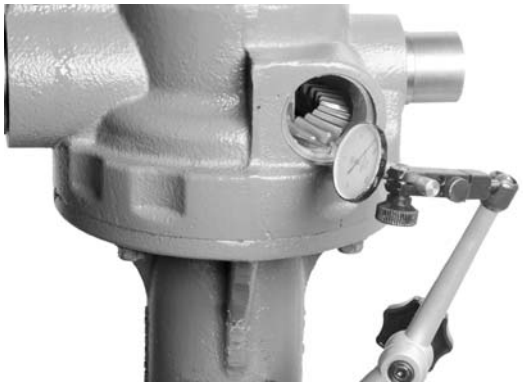


FIGURE 86:

13. Set backlash to 0.004–0.006 in. [0.1–0.15 mm] using a dial indicator through the window provided in the long housing.

If backlash is not to spec, adjust the shim to set the correct backlash:

- Increase shims to reduce backlash
- Decrease shims to increase backlash

FIGURE 87:

14. Once backlash is set, remove the four (4) bolts used for the temporary assembly and remove the short housing.

FIGURE 88:

15. Install the right-hand axle shaft.

FIGURE 89:

16. Apply Loctite 515 evenly to the surface of the trumpet housing.

FIGURE 90:

17. Install the short housing to the long housing by applying Loctite 262 to all capscrews and torquing to 50–55 lbs. ft. [68–75 N•m].

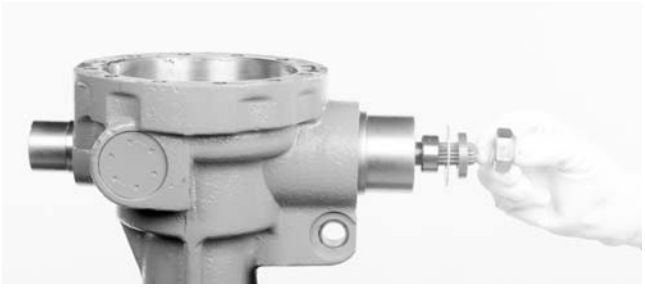


FIGURE 91:

18. Remove spacer (K), slinger (M), spacer (N), and old pinion nut (O).

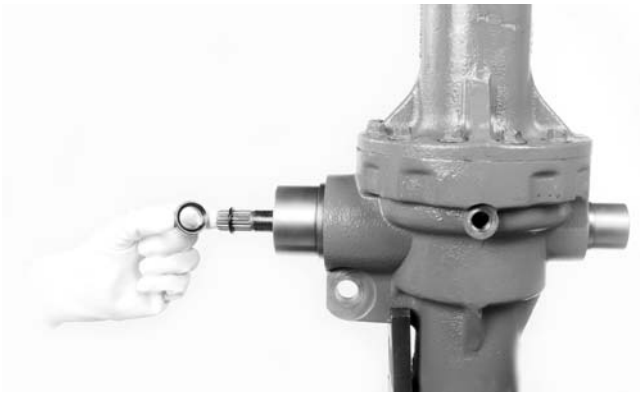


FIGURE 92:

19. Install new o-ring (J).

⚠CAUTION

The o-ring (J) should always be replaced. Do not reuse.

FIGURE 93:

20. Install a new oil seal (K) using the Pinion Seal Tool, page 34, to sure ensure the seal seats correctly.

⚠CAUTION

The oil seal (L) should always be replaced. Do not reuse.

FIGURE 94:

21. Install spacer (K), slinger (M), spacer (N) & **NEW pinion nut** (O). Apply Loctite 272 to pinion nut threads and tighten to 75–90 lbs. ft. [102–122 N•m].

FIGURE 95:

22. Install the center housing welch plug cap using the Welch Plug Driver Tools, page 36.

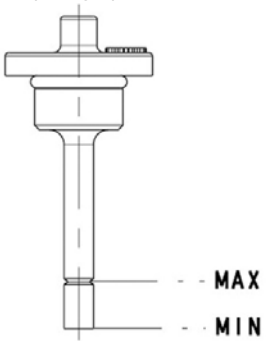
⚠CAUTION

The welch plug should always be replaced. Do not reuse.

Drain Plug Installation

FIGURE 96:

1. Apply Loctite 565 to center housing drain plug threads (left photo above) and tighten to 12-15 lbs. ft. [16-20 N•m].
Apply Loctite 565 to wheel end drain plug threads (right photo above) and tighten to 12-15lbs. ft. [16-20 N•m].
Then fill final drive housings and main axle with 3.8L (1.0 gal) J20C oil.



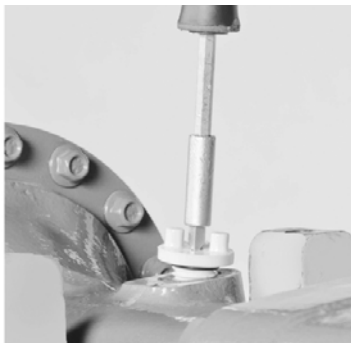


FIGURE 97:

2. Verify the oil level is between the MIN and MAX level on the dipstick.

⚠CAUTION

Avoid Damage! Allow oil one hour to settle before checking level to ensure accurate dipstick reading. Then repeat oil check after several hours of operation.

Tie Rod Installation

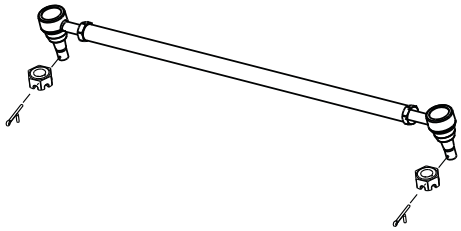


FIGURE 98:

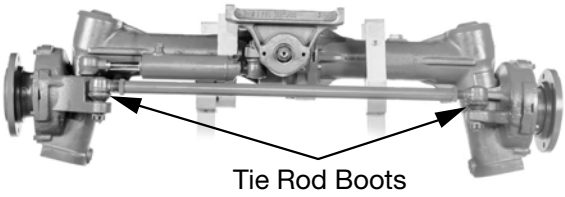


FIGURE 99:

1. Inspect tie rod end boots, replacing boots as needed.
2. Insert tie rod ends into holes in knuckle arms.

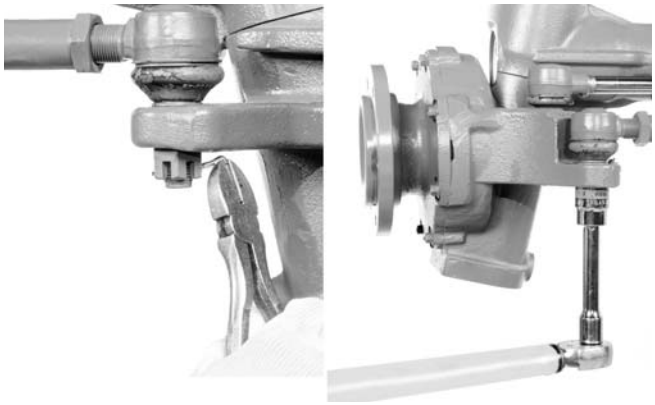


FIGURE 100:

3. Install castle nuts to tie rod ends and tighten to 74–85 lbs. ft. [100–115 N•m].
4. Install cotter pins. If slots in castle nuts do not align with holes after torquing, tighten nuts until next slot aligns.
5. Adjust toe-in. (See “Axle Installation & Toe-in Adjustment”, on page 28.)
6. Install wheel to final drive.
7. Torque the tie rod jam nut to 85–96 lbs. ft. [115–130 N•m]

Steering Cylinder Installation

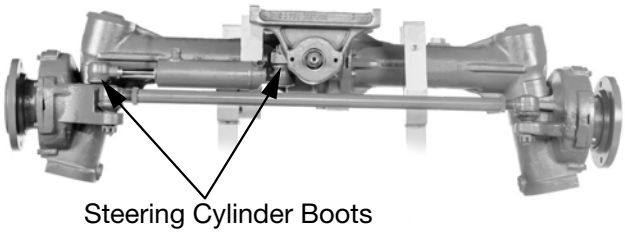


FIGURE 101:

1. Inspect steering cylinder boots, replacing as needed.

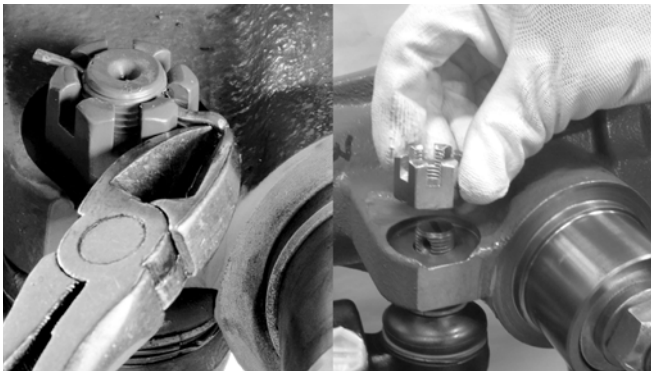


FIGURE 102:

2. Install cylinder with castle nuts tightened to 74–85 lbs. ft. [100–115 N•m]. Install cotter pins. If slots in castle nut do not line up with cotter pin holes, continue tightening nut until next slot aligns.

Axle Trunnion Installation

1. Raise front axle off ground to take weight off front axle.

Assemble Rear Trunnion

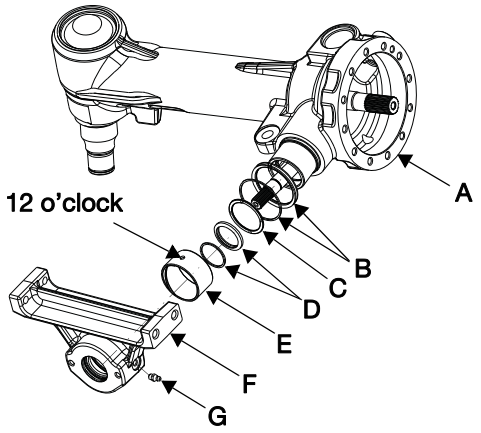


FIGURE 103:

2. Insert the rear bushing (E) on the rear trunnion (F).

⚠CAUTION

Ensure the hole in the bushing is oriented in the 12 o'clock position.

3. Install v-ring and v-ring seal (B) on center section pin (A).
4. Install the thrust washer (C) on the rear trunnion (F) bore. It might be necessary to apply grease to the thrust washer to hold it in place.
5. Install v-ring and v-ring seal (D) in the rear trunnion (F).
6. Slide rear trunnion (F) on center section (A) pin.

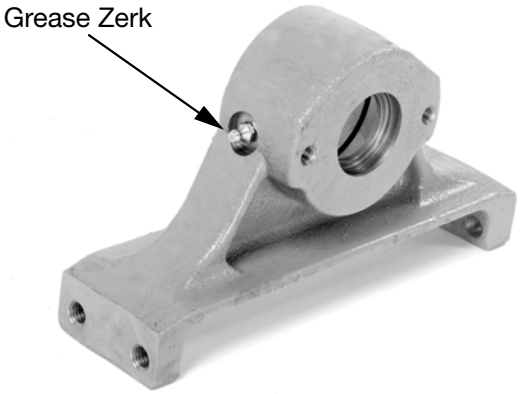


FIGURE 104:

7. Grease the rear trunnion after installation using the grease zerk (G) until grease purges out from the v-ring.

Assemble Front Trunnion

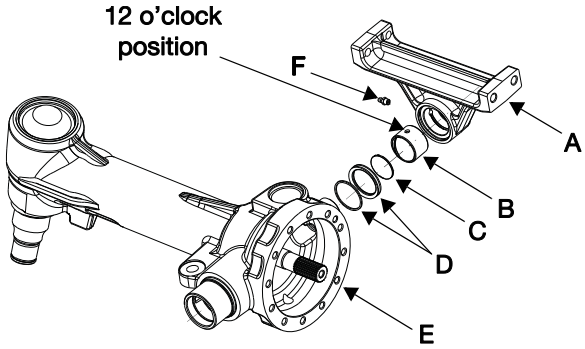


FIGURE 105:

1. Install bushing (B) in front trunnion (A).

⚠CAUTION

Ensure the hole in the bushing is oriented in the 12 o'clock position.

2. Install the thrust plate (C) on the front trunnion (A). It might be necessary to apply grease to thrust plate to hold it in place.
3. Install v-ring and v-ring seal (D) on center section (E) pin.
4. Slide front trunnion (A) on center section (E) pin.

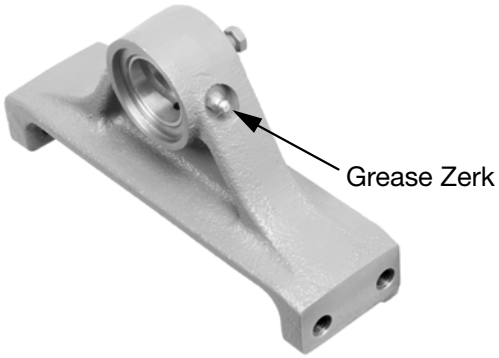


FIGURE 106:

5. Grease the front trunnion using the grease zerk (F) until grease purges out from the v-ring.

Axle Installation & Toe-in Adjustment

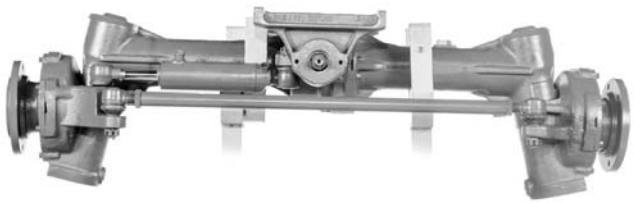


FIGURE 107:

6. Supporting the axle with a hoist and install axle into vehicle. Install front wheels.

NOTE:

The toe-in adjustment must be performed on the vehicle.

7. Jack up front axle so tires are off floor.
8. Rotate tire by hand and scribe a line near the center of each of the front tires.

NOTE:

One of the tie rod ends and jam nut has left-hand threads.

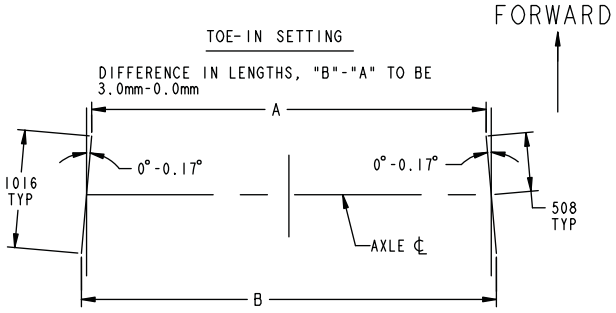


FIGURE 108:

9. Measure and record the distance between the lines at the front and the rear of the tire at about axle height. The front measurement should be less than the rear measurement.
10. If measurement is not correct, loosen jam nuts on both ends of tie rod and turn the tie rod using a wrench to increase or decrease the amount of toe until the measured dimension is 0–0.125 in. [0–3 mm] between the front and rear.
11. Apply Loctite 262 and tighten the jam nuts to 85–96 lbs. ft. [115–130 N•m].

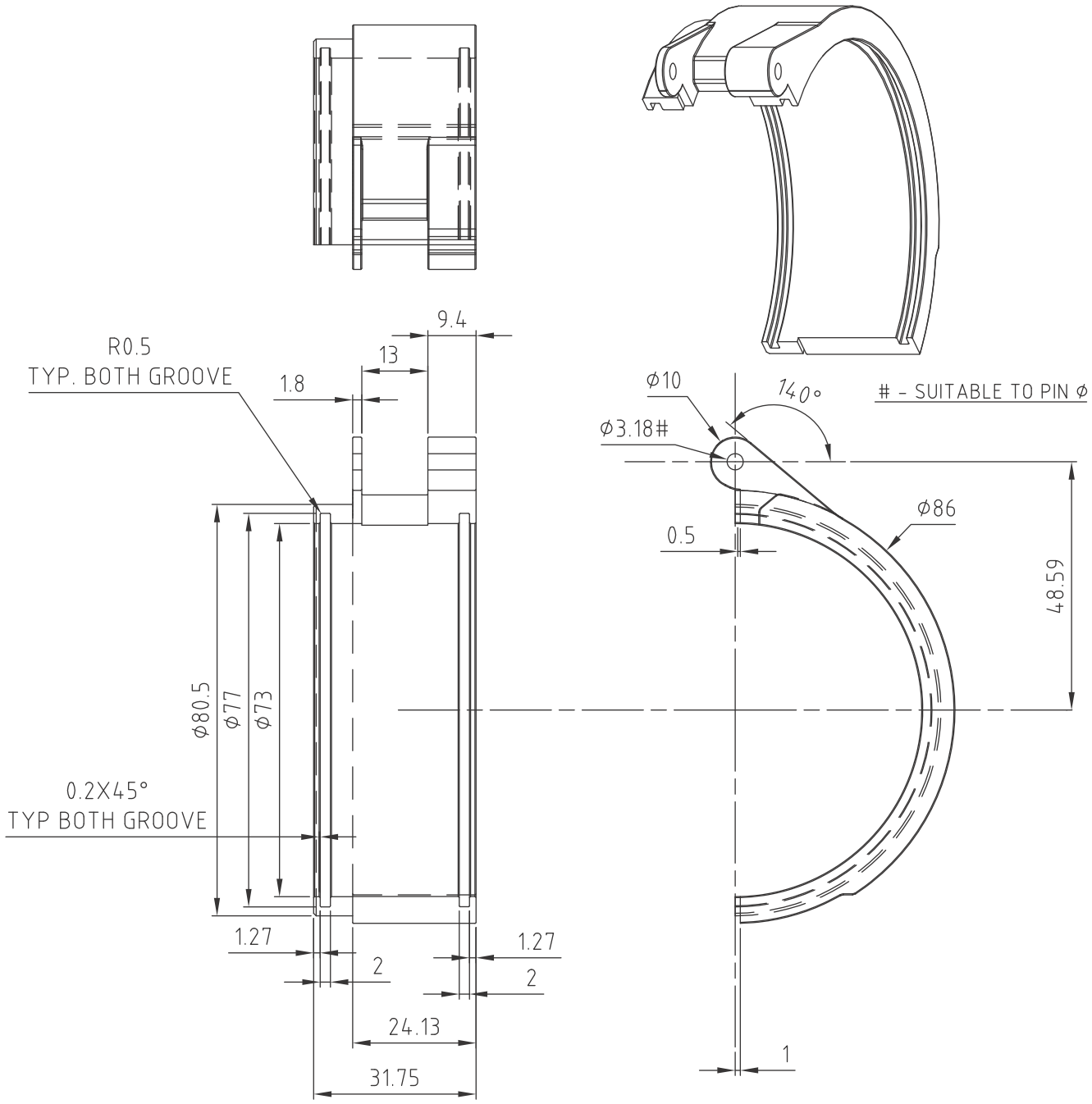
Driveshaft & Hydraulic Line Installation

1. Position driveshaft onto machine. While supporting drive shaft, slide splined connector toward machine.
2. Install spring pin to drive shaft splined connector.
3. Connect steering cylinder hydraulic lines.

SPECIAL TOOLS

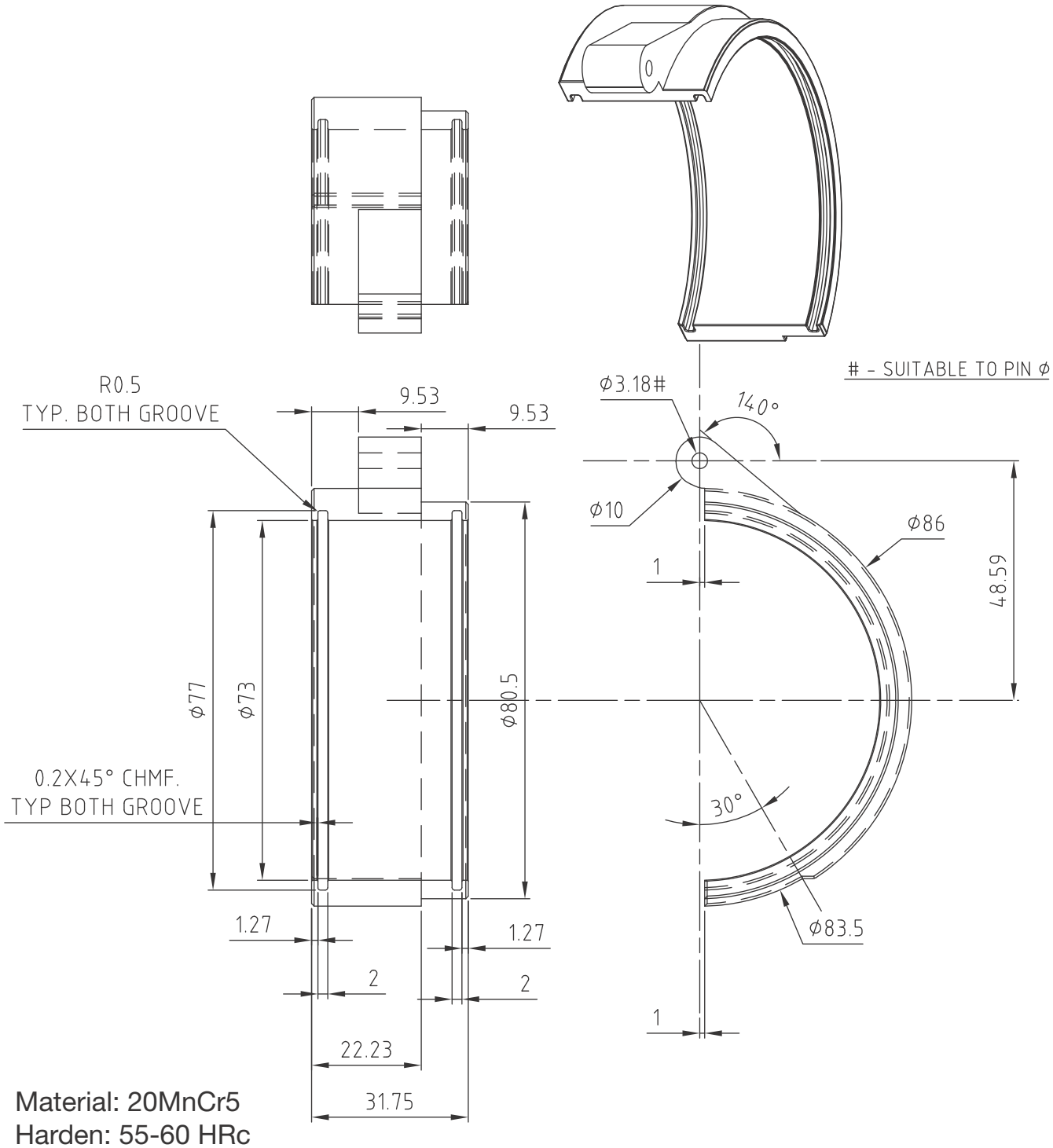
Face Seal Tool

Left-Hand Side



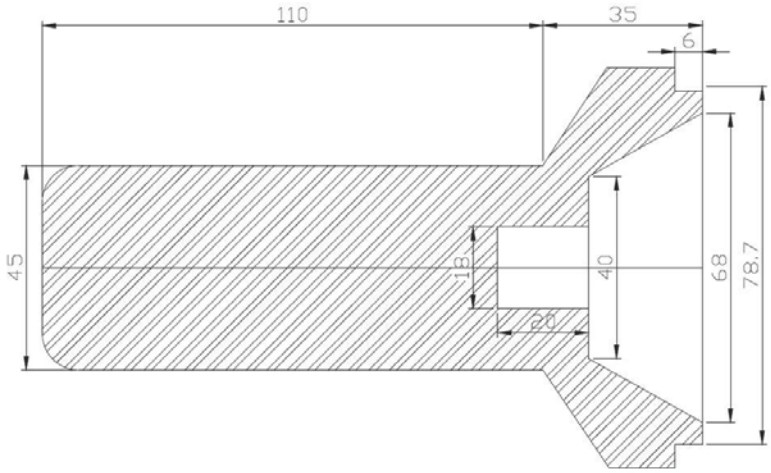
Material: 20MnCr5
Harden: 55-60 HRc

Right-Hand Side

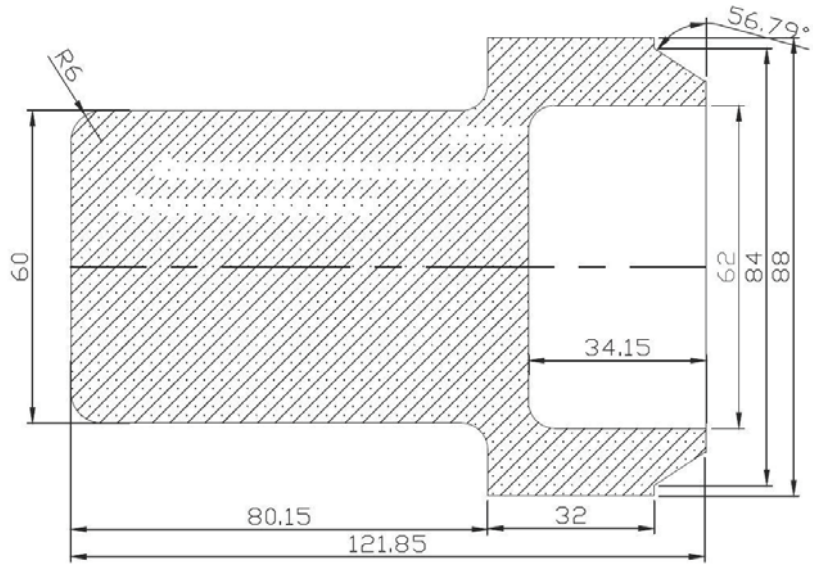


Face Seal Cup Driver

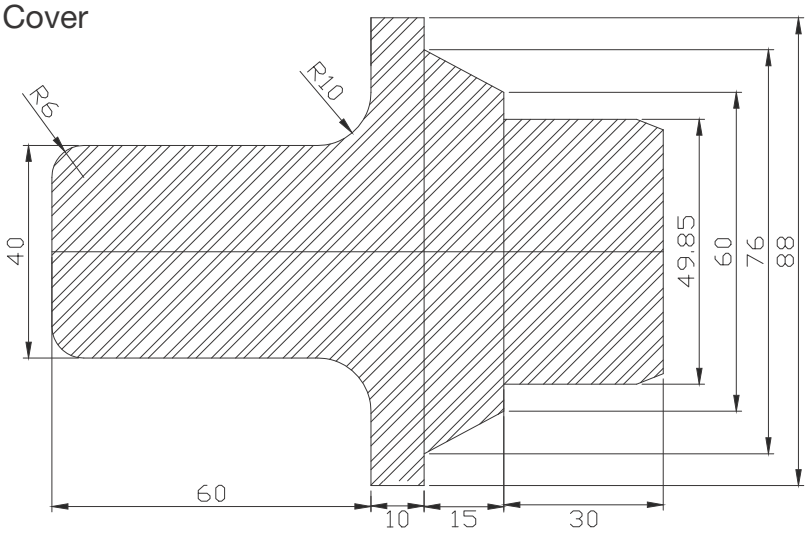
Shoulder



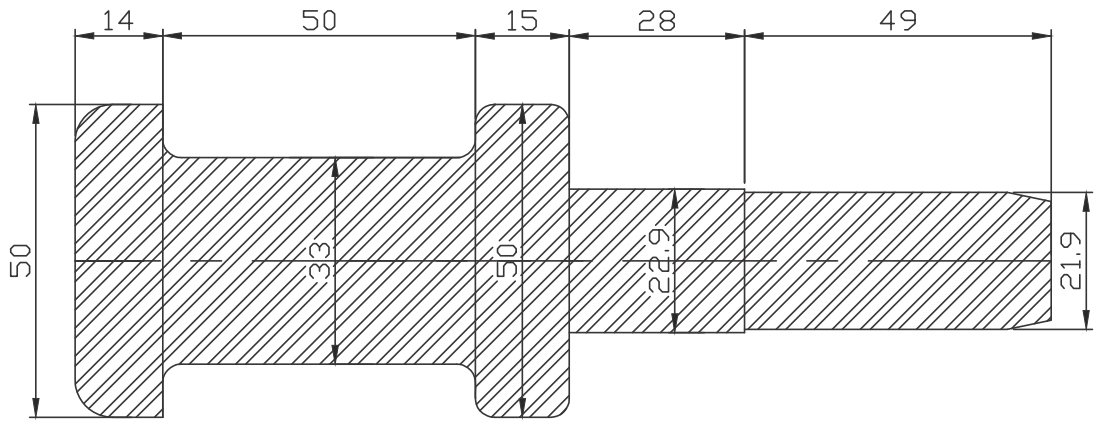
Knuckle



Final Drive Cover

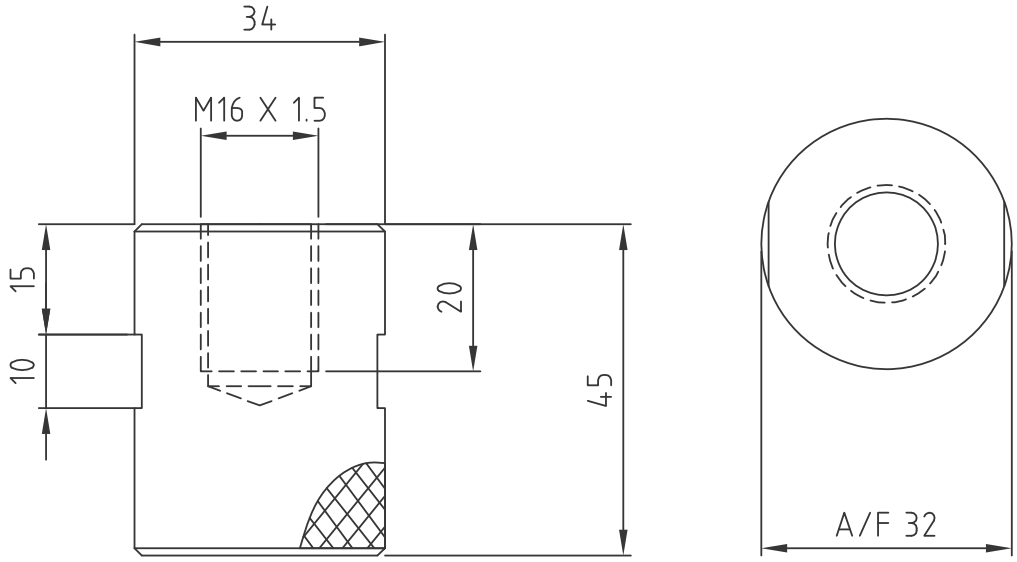


Knuckle Bearing Driver Tool

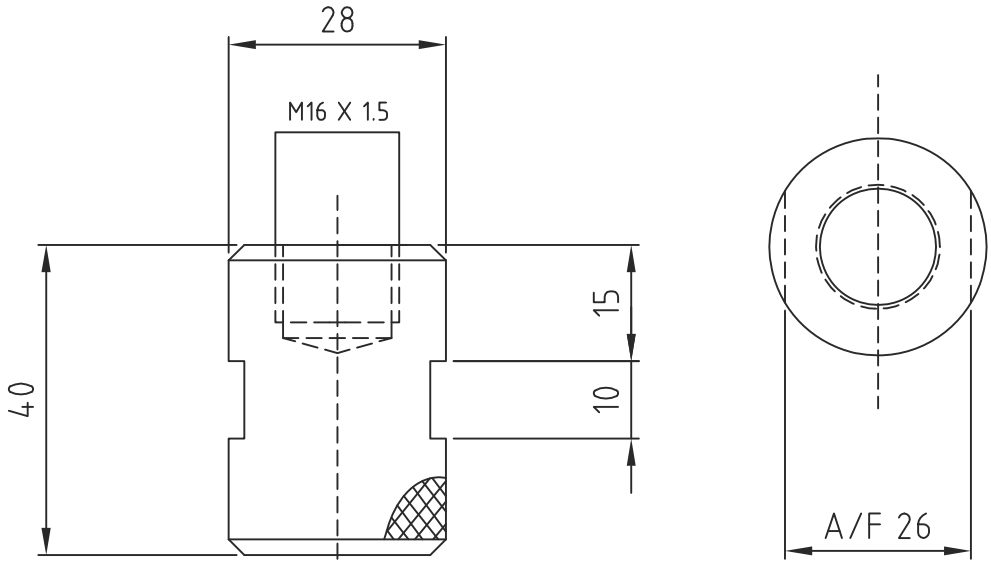


Steering Cylinder & Tie Rod Removal Tool

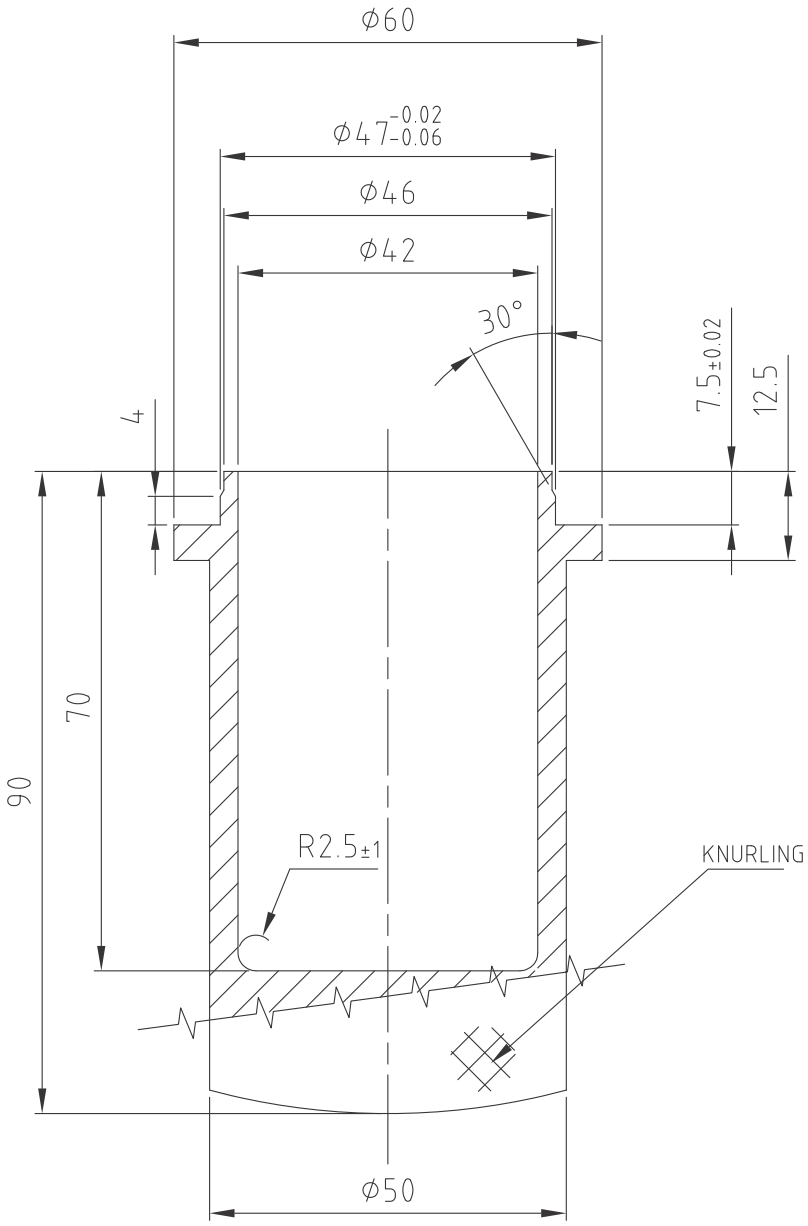
Steering Cylinder



Tie Rod

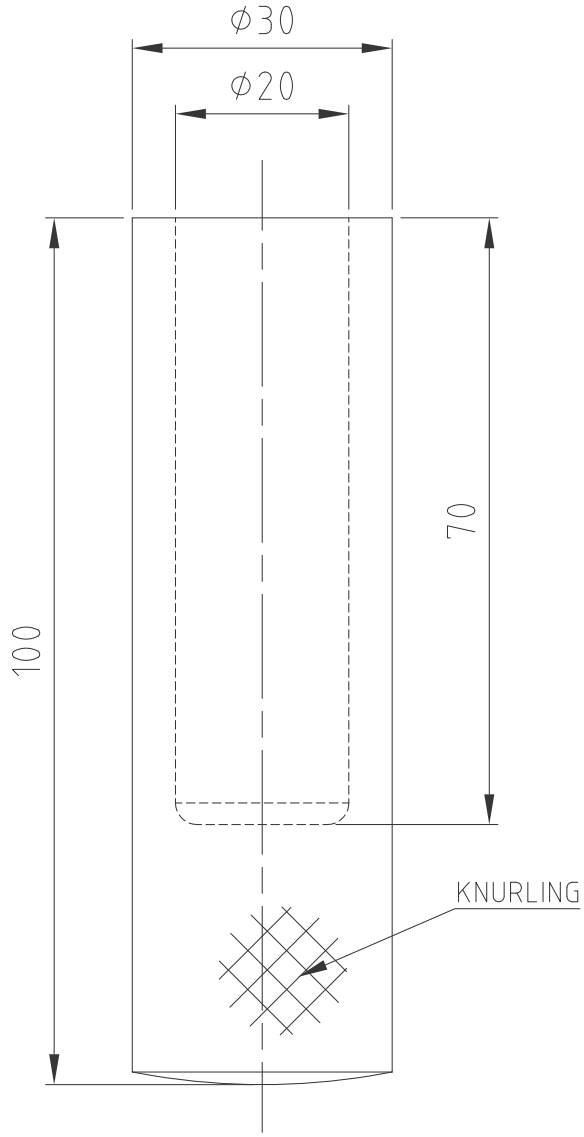


Pinion Seal Tool



Material: 20MnCr5
Harden: 55-60 HRc

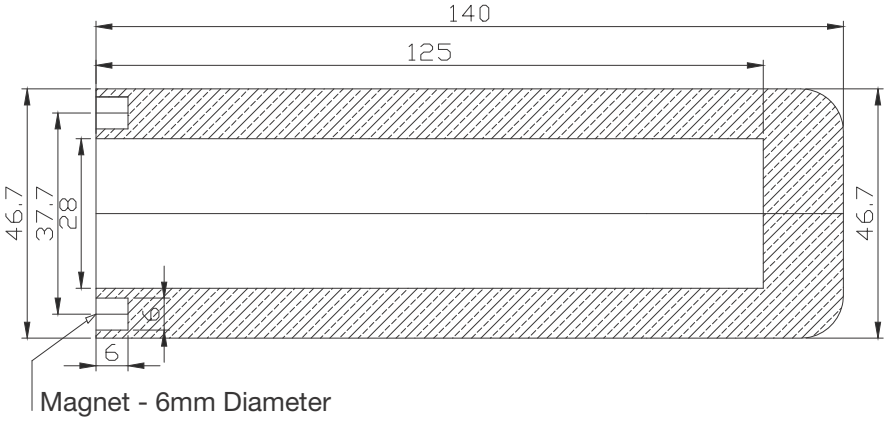
Pinion Bearing Driver Tool



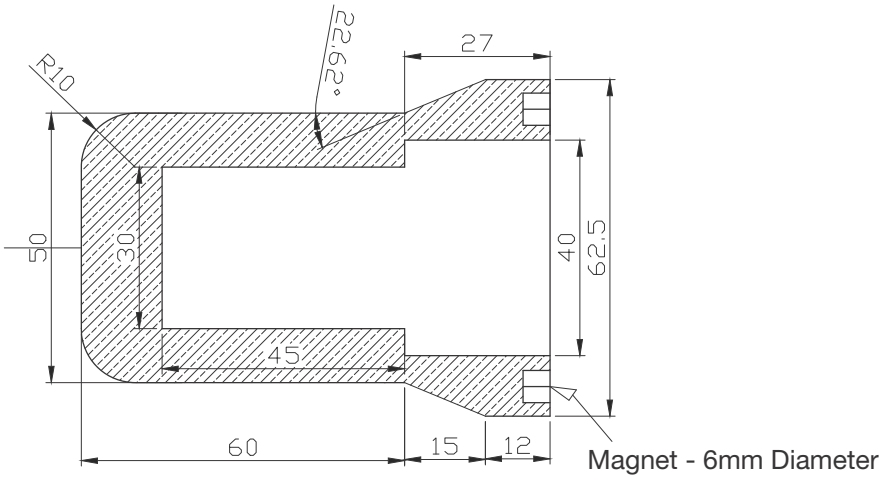
Material: 20MnCr5
Harden: 55-60 HRc

Welch Plug Driver Tools

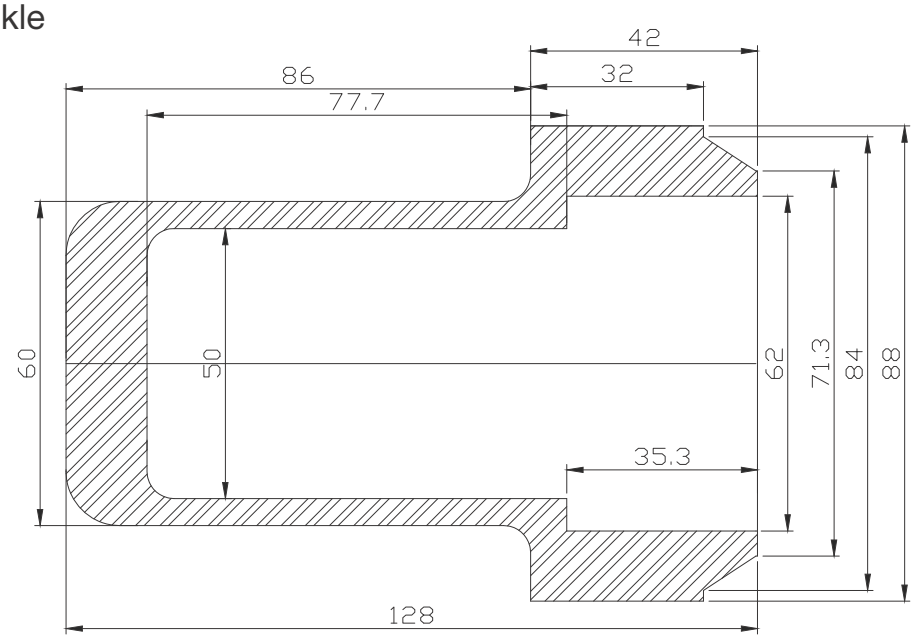
Center Housing



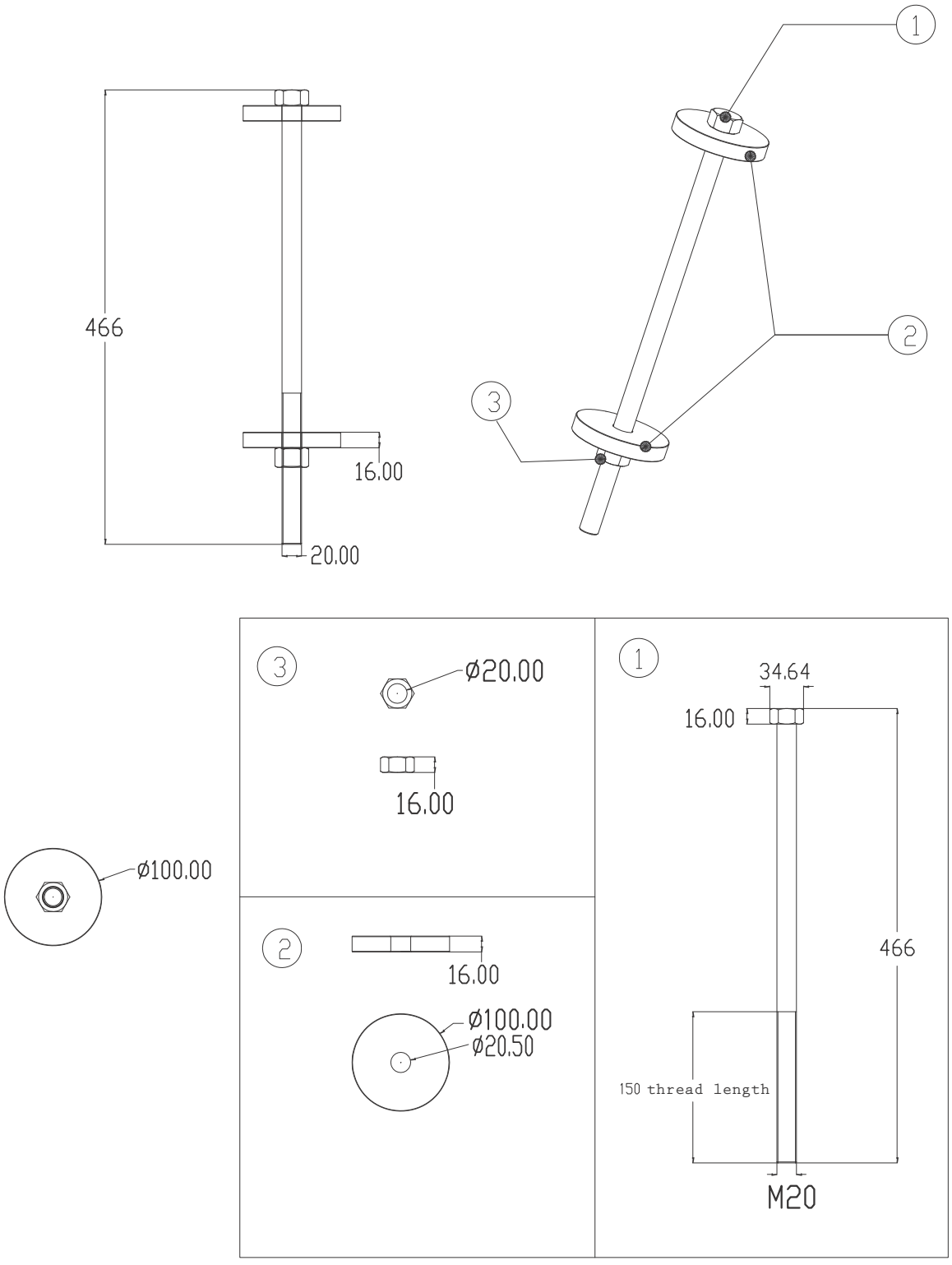
Shoulder



Knuckle



Knuckle to Trumpet Assembly Tool



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